

## **REMARKS**

### **I. Introduction**

With the cancellation herein without prejudice of claim 26, claims 1 to 25 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that the present application is in condition for allowance, and reconsideration is respectfully requested.

### **II. Rejections of Claims 3, 5 and 7 to 10 Under 35 U.S.C. § 112, First Paragraph**

Claims 3, 5 and 7 to 10 were rejected under 35 U.S.C. 112, first paragraph as allegedly failing to comply with the written description requirement. It is respectfully submitted that the present rejections should be withdrawn for at least the following reasons.

The Final Office Action alleges that the Specification fails to provide a description of how a convexly shaped region is generated by a control signal as recited in claims 4 and 5. Final Office Action, page 2. The Final Office Action further asserts that the specification does not provide adequate written description as to how the actuator layer is deformable as a function of an electrical field, electromagnetic field or optical signal, e.g., light as recited in claims 7 to 10. Final Office Action, page 3.

As an initial matter, the above assertions appear to indicate a misapprehension of the distinct concepts of the written description requirement of 35 U.S.C. § 112, first paragraph, and the enablement requirement of 35 U.S.C. § 112, first paragraph. The written description requirement does not require a showing of how claimed features are implemented but instead merely requires that the claimed subject matter is described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The question of how claimed features are implemented is more directly related to the enablement requirement, which requires that the claimed subject matter is described in the specification in such a way as to enable a person skilled in the art to make and use the invention without undue experimentation. As set forth below the specification complies with the requirements of 35 U.S.C. 112, first paragraph, including the written description and enablement requirements.

Regarding the written description requirement, the Office bears the initial burden of presenting "evidence or reasons why persons skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims." (See M.P.E.P. § 2163.04 (citing *In re Wertheim* 541 F.2d 257, 262, 265, 191 U.S.P.Q. 90, 96, 98 (C.C.P.A. 1976))) (emphasis added). The M.P.E.P. also provides that if an examiner rejects a claim based on the lack of a written description, the examiner should "identify the claim limitation not described" and provide "reasons why persons skilled in the art would not recognize the description of this limitation in the disclosure of the application." (See *id.*) (emphasis added). Further, there is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. *In re Wertheim* 541 F.2d 257, 263, 191 U.S.P.Q. 90, 97 ("we are of the opinion that the PTO has the initial burden of presenting evidence or reasons why persons skilled in the art would not recognize in the disclosure a description of the invention defined by the claims"). Applicants respectfully submit that the Final Office Action has not met its burden of establishing why persons skilled in the art would not recognize in the disclosure a description of the subject matter defined by the claims.

Factors to be considered in determining whether there is sufficient written description include the level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function and method of making the claimed subject matter. Where the specification discloses relevant identifying characteristics, e.g., physical, chemical and/or functional characteristics, sufficient to allow a skilled artisan to recognize that the applicant was in possession of the claimed subject matter, a rejection for lack of written description under 35 U.S.C. § 112, first paragraph cannot be maintained. *Enzo Biochem, Inc. v. Gen-Probe, Inc.*, 323 F.3d 956 (Fed. Cir. 2002).

Moreover, claims 3 and 5 form part of the originally filed Specification. Accordingly, Applicant respectfully submits that the claim language of claims 3 and 5 itself provides an adequate written description for these claims. That is, the claim language itself is part of the original specification and taken alone show that the Applicant had possession of the claimed subject matter as required by the written description requirement. Additionally, the Specification states that "[t]he operating surface geometry . . . may be deformable as a function of a control signal," that

"[d]isplay device 20 has a display 21 arranged as a touch screen on which an actuator layer 22 is positioned," and that "[a]s illustrated in Figure 4, a control signal may be used to generate a convexly shaped region 23." Specification, page 3, lines 1 to 3 and page 5, lines 18 to 21. Further, the Specification states "[t]he element in Figures 3, 4 and 5 are shown in consideration of simplicity and clarity." Specification, page 6, lines 34 to 35. Thus, the claim language itself and the Specification clearly provide an adequate written description for claims 3 and 5.

Also, claims 7 to 10 form part of the originally filed Specification.

Accordingly, Applicant respectfully submits that the claim language of claims 7 to 10 itself provides an adequate written description for these claims. That is, the claim language itself is part of the original specification and taken alone show that the Applicant had possession of the claimed subject matter as required by the written description requirement. Additionally, the Specification states that "[t]he operating surface geometry . . . may be deformable as a function of a control signal . . . the control signal may include an optical signal, e.g., light . . . the control signal may include electrical and/or electromagnetic field." Specification, page 3, lines 1 to 11. The Specification goes on to state that "the display device may include a suitably designed computing device or logic circuit which is used to generate appropriate control signals." Specification, page 4, lines 1 to 3. Thus, the claim language itself and the Specification clearly provide an adequate written description for claims 7 to 10.

While claims 3, 5 and 7 to 10 were not rejected as failing to comply with the enablement requirement, for completeness and to further prosecution, the following comments are made. As an initial matter, "[t]he test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosure in the patent coupled with information known in the art without undue experimentation." *United States v. Telectronics, Inc.*, 857 F.2d 778, 785 (Fed. Cir. 1988). The critical test is not whether experimentation is necessary or complex, but whether the experimentation is undue. *In re Angstadt*, 537 F.2d 498 (C.C.P.A. 1976). It is well settled that an applicant need not make or test all embodiments of the claimed subject matter in order to meet the enablement requirement of 35 U.S.C. § 112. So long as the Specification discloses at least one manner of making and using the claimed subject matter that bears a reasonable correlation to the entire scope of the claim, the enablement requirement of 35 U.S.C. §112 is satisfied. *In re*

*Fisher*, 427 F.2d 833, 839, 166 U.S.P.Q. 18, 24 (C.C.P.A. 1970). As set forth in the above referenced sections of the Specification relating to claims 3, 5 and 7 to 10, the Specification discloses methods for making the claimed subject matter that bears a sufficient correlation to the entire scope of each claim. Additionally, regarding claims 3 and 5, the particular details of how the control signal is sent to the deformable geometry to produce a convexly shaped region would be readily understood to a person of ordinary skill in the art and need not be spelled out in the Specification. Also, regarding claims 7 to 10, the Specification sufficiently discloses to a person of ordinary skill in the art the use of an optical signal (e.g., light), an electrical field or an electromagnetic field as a control signal.

In view of the foregoing, it is respectfully submitted that claims 3, 5 and 7 to 10 fully comply with the requirements of 35 U.S.C. § 112, and withdrawal of this rejection is therefore respectfully requested.

The Office Action also asserts that the paragraph added by the Preliminary Amendment filed on January 14, 2004 adds new matter and is not supported by the original specification. Office Action, page 8. Applicant respectfully disagrees. The Specification provides:

The actuator layer may be statically deformable at least for the duration of the control signal. This means, for example, that the actuator layer may not (tangibly) vibrate for the duration of the control signal, but rather may remain substantially statically deformed ... user inputs are able to be entered in the area of the actuator layer, thus, for example, through the actuator layer ... the actuator layer may be controllable along the lines of a haptic feedback. For this, the display device may include a suitably designed computing device or logic circuit which is used to generate appropriate control signals ... the display device may include a computing device which deforms the actuator layer via the control signal at a point of contact where the actuator has been touched by a user ... the computing device may deform the actuator layer at the point of contact only when a user has made an input via the display by touching the point of contact.

Specification, page 3, line 14 to page 4, line 11 (*emphasis added*). Thus, the Specification as filed discloses that the actuator layer may be continuously actuated until touched by a user, thus creating haptic feedback. Further, it is disclosed that

the control system may release deformation on the actuator layer at the point of contact when a user has made an input via the display by touching a point of contact. Even if, assuming *arguendo*, the new paragraph was not expressly recited in the original specification, Section 2163.07(a) of the M.P.E.P., provides:

By disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicit concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter.

M.P.E.P. § 2163.07(a) (emphasis added) (citing *In re Reynolds*, 443 F.2d 384, 170 U.S.P.Q. 94 (C.C.P.A. 1971); *In re Smythe*, 480 F.2d 1376, 178 U.S.P.Q. 279 (C.C.P.A. 1973)). Therefore, the paragraph added by the Preliminary Amendment filed on January 14, 2004 did not introduce new matter, and withdrawal of this rejection is therefore respectfully requested.

### **III. Rejection of Claims Under 35 U.S.C. § 102**

Claims 1 and 20 to 23 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent Application Publication No. 2003/0234769 ("Cross et al."). It is respectfully submitted that Cross et al. do not anticipate the present claims for at least the following reasons.

As an initial matter, it appears that the present rejection is based on a misapprehension of a control signal. In this regard, the Final Office Action contends at page 9 that "'pressing using a force that exceeds a limiting value' is the control signal." While the Specification mentions that "the actuator layer may be deformable in response to pressing using a force that exceeds a limiting value," a plain reading of the Specification makes abundantly clear that "pressing using a force that exceeds a limiting value" is not a control signal in the present context. Nevertheless, to clarify, claims 1 and 20 to 22 have been amended herein without prejudice to recite that the control signal is generated by at least one of (a) a computation device and (b) a logic circuit. Support for these amendments may be found, for example, on page 4, lines 1 to 3, which state that "the display device may include a suitably designed computing device or logic circuit which is used to generate appropriate

control signals.” This makes perfectly clear that a user pressing using a force that exceeds a limiting value is not a control signal. Since the present rejection is predicated on this apparent basic misapprehension of a control signal, it is respectfully submitted that the present rejection is now rendered moot.

That is, Cross et al. do not disclose, or even suggest, a display device that includes an actuator layer that includes an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a logic circuit.

Rather, Cross et al. describe, e.g., at paragraph [0070] a data processing system 800 with a transparent touch screen 806 arranged above a display 808. Even though the transparent touch screen 806 may be deformable when touched by a user or due to a touch force, Cross et al. in no manner disclose, or even suggest, that the transparent touch screen 806 is deformable as function of a control signal generated by a computation device or a logic circuit. Figure 1B of Cross et al. depicts the layer 110 deforming as a result of being physically touched with sufficient force. A physical touch as described in Cross et al., paragraph [0034] is not a control signal from a computation device or logic circuit. Indeed, the Final Office Action admits at page 7 that Cross et al. do not disclose this feature, to wit:

Cross [et al. do] not disclose a computation device configured to generate the control signal and the operating surface geometry is deformable in response to the control signal generated by the computation device.

Accordingly, Applicant respectfully submits that the rejections under § 102 should be withdrawn.

#### **IV. Rejection of Claims Under 35 U.S.C. § 103**

Claims 1, 2, 4 to 6, 11 to 13 and 16 to 23 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of U.S. Patent No. 6,373,472 (“Palalau et al.”) and Cross et al., claims 7 to 10 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Palalau et al., Cross et al. and U.S. Patent No. 5,252,951 (“Tannenbaum et al.”), claim 14 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Palalau et al., Cross et al. and U.S. Patent Application Publication No. 2004/0017362 (“Mulligan et al.”), claim 15

was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Palalau et al., Cross et al. and U.S. Patent No. 6,429,846 ("Rosenberg et al."), and claims 24 to 26 were rejected under 35 U.S.C. § 103(a) as unpatentable over Cross et al. or Palalau et al. and Cross et al. and U.S. Patent Application No. 2002/0084721 ("Walczak"). It is respectfully submitted that the rejections should be withdrawn for at least the following reasons.

As an initial matter, claim 26 has been canceled herein without prejudice, thereby rendering moot the rejection of claim 26.

As discussed above, amended independent claims 1, and 20 to 22 include, *inter alia*, an operating surface geometry deformable as a function of a control signal generated by at least one of (a) a computation device and (b) a control circuit. As also discussed above, the Final Office Action admits that Cross et al. do not disclose this feature. The Final Office Action also admits at page 7 that Palalau et al. do not disclose this feature. Additionally, neither Tannenbaum et al., Mulligan et al. nor Rosenberg et al. disclose this feature.

The Final Office Action asserts that Walczak describes "a touch input device having a computation device . . . the operating surface geometry (piezoelectric layer) deformable in response to the control signal generated by the computation device" and that it would have been obvious to one of ordinary skill in the art to modify the device of Cross et al. or Palalau et al. as modified by Cross to have a computation device configured to generate a control signal as described by Walczak. Office Action, page 7. Applicant vigorously asserts that one of ordinary skill in the art would not combine Cross et al. or Palalau et al. with Walczak as proposed in the Final Office Action for at least the reason that the keypad described by Walczak, if placed over a display device, would block the view of the display and thereby defeat one of the purposes of having a visual display — *e.g.*, to view and interact with different masks. Thus, the proposed modification would render a display device unsatisfactory for its intended purpose. As such, there is no motivation to make the proposed combination. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984) (if a proposed modification would render the device being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification).

Walczak describes a keypad assembly 100 for a portable communication device having a plurality of piezoelectric keys 110 to receive user

input and provide tactile feedback to the user in response to such user input. See Abstract. The keypad assembly includes one or more keys in which each key has a piezoelectric layer, a conductive layer on one side of the piezoelectric layer and another conductive layer on the other side of the piezoelectric layer. Paragraph [0014]. An electronic circuit is coupled to the conductive layers of each key. *Id.* When the electronic circuit receives a selection signal from a particular key, the electronic circuit provides a feedback signal to the particular key in response. *Id.* The feedback described in Walczak is a “stimulus signal” or “current pulse” to a key in response to receiving a selection signal from the key (*i.e.*, the key is pressed). Paragraph [0016]. As described by Walczak, a membrane layer may include keypad graphics such as alphanumeric designation for a particular key or a graphic image representing a function initiated by selecting a key. Paragraph [0017]. Thus, the computing device described by Walczak provides feedback to keys and necessarily includes a piezoelectric layer and conductive layers. Such a device would not be used in conjunction with a display device because it would block the view of the display.

The Final Office Action provides no indication of a suggestion or motivation by Cross et al., Palalau et al. or Walczak to make the proposed combination. In fact, as discussed above, such a combination is not physically possible without negatively affecting the functionality of a display. If the desirability of the combination cannot be found in the prior art, then a rationale must be provided that is reasoned from knowledge generally available to one of ordinary skill in the art, based on established scientific principles, or based on legal precedent established by prior case law. See M.P.E.P. 2144. At least a convincing line of reasoning must be presented to support the rejection. *Ex Parte Clapp*, 227 U.S.P.Q. 972 (Bd. Pat. App. & Inter. 1985). It is respectfully submitted that the Final Office Action has not provided any convincing line of reasoning for making the proposed modification. As discussed above the device disclosed in Walczak would not be combined with a display device. As such, the present rejection is apparently based on nothing more than improper hindsight, which cannot support an obviousness rejection.

In view of all of the foregoing, it is respectfully submitted that the rejections under 35 U.S.C. § 103(a) should be withdrawn.



V. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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